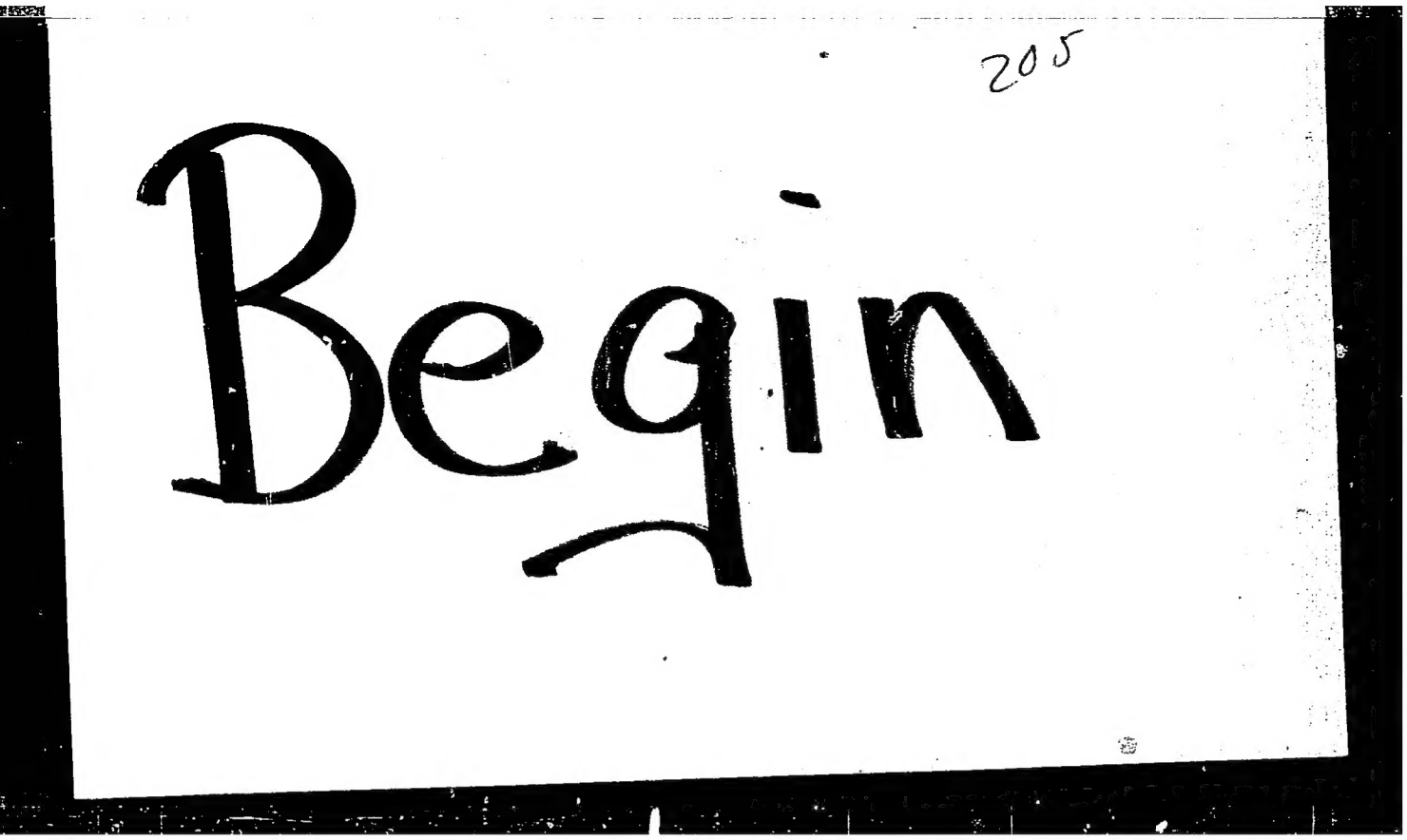
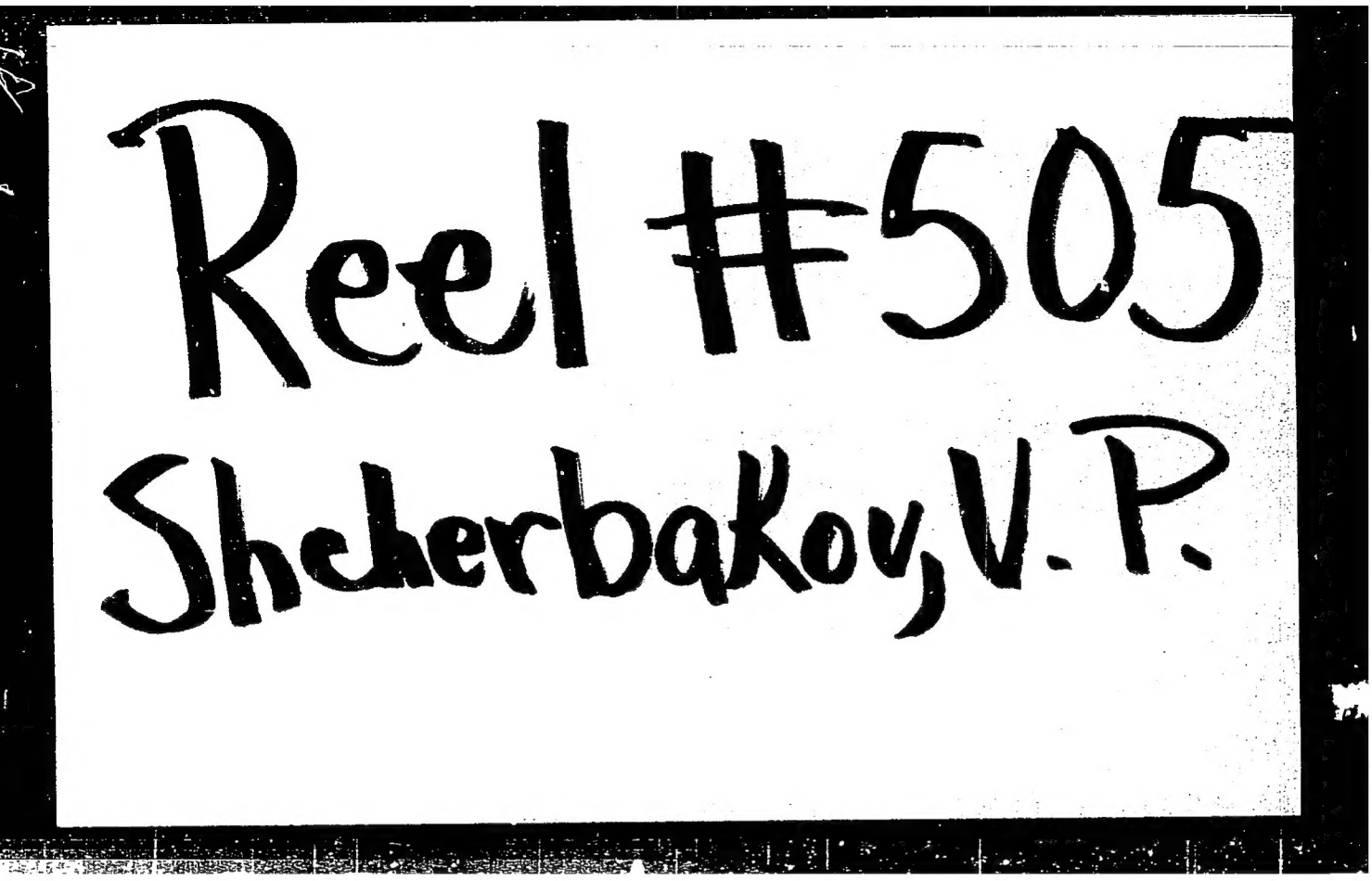




VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.; KLIMENCHUK, V.P.

Determination of mercury in coals by dithizone. Zav.lab. 28 no.4:415 '62. (MIRA 15:5)

1. Institut mineral'nykh resursov AN USSR.
(Mercury--Analysis) (Dithizone)
(Coal--Analysis)

DVORNIKOV, A.G.; VASILEVSKAYA, A.Ye., SHCHERBAKOV, V.P.

Some characteristics of the distribution of mercury dispersion halos in the soils of the Nagol'nyy Range. Geokhimiia no.5, 478-483 My '63. (MIRA 16:7)

1. Institute of Mineral Resources of the Academy of Sciences U.S.S.R., Moscow.

(Nagol'nyy Range—Mercury ores)

VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.; LEVCHENKO, A.V.

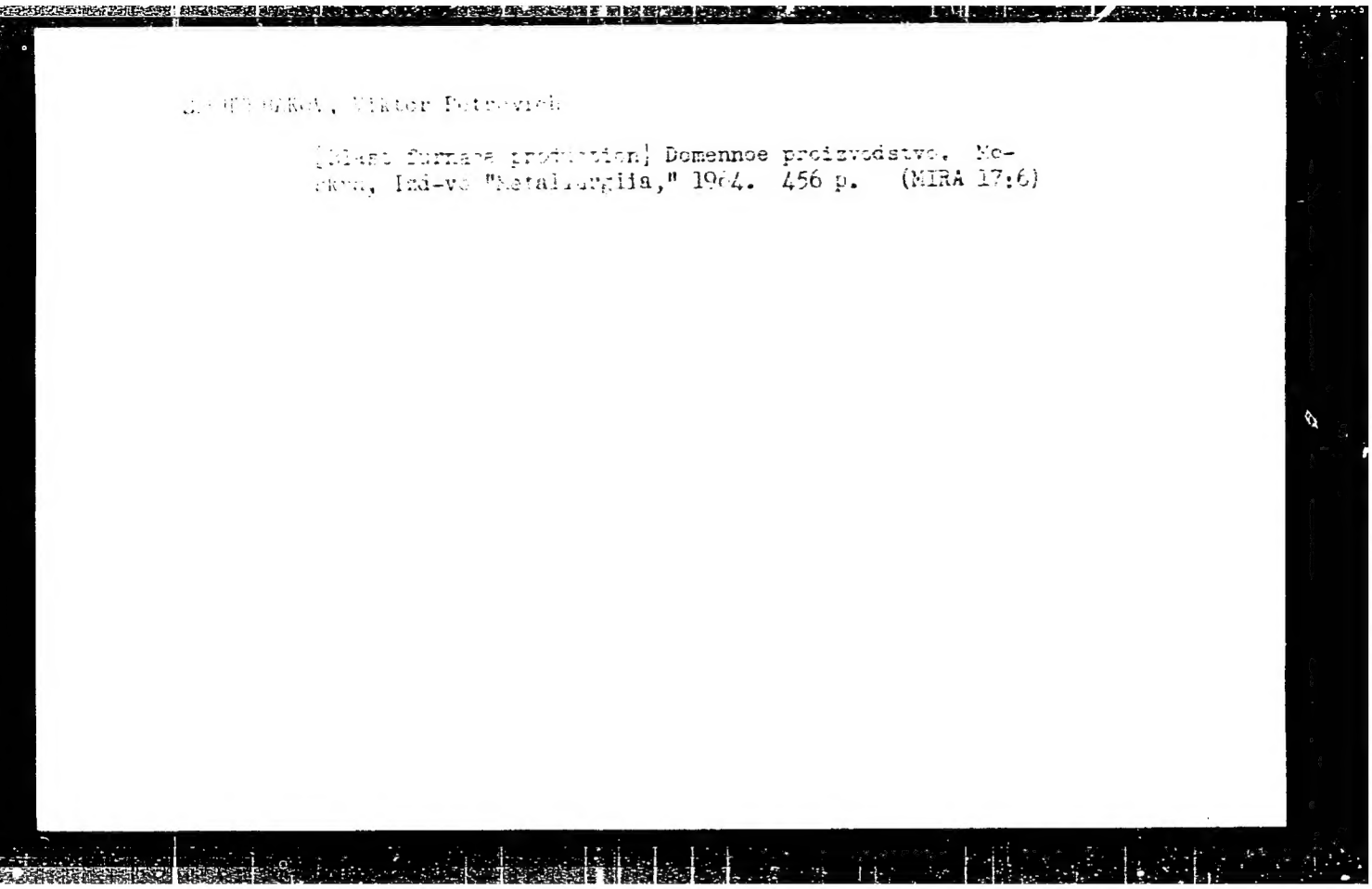
Determiantion of small amounts of mercury in waters. Zhur. anal.khim. 18 no.7:811-815 Jl '63. (MIRA 16:11)

1. Institute of Mineral Resources, Academy of Sciences, Ukranian SSR, Simferopol.

DVORNIKOV, A.G.; VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.; SHVAKOVA, A.A.

Mercury dispersion halos in the soils of the Nagol'no-Tarasovka and Mar'yevko-Dar'yevka complex metal deposits. Izv. AN SSSR. Ser.geol. 28 no.5:96-100 My '63. (MIRA 17:4)

1. Institut mineral'nykh resursov AN UkrSSR, Simferopol'.



[illegible], Viktor Petrovich

[Blast furnace production] Domennoe proizvodstvo. Moskva, Izd-vo "Metallurgiia," 1964. 456 p. (MIRA 17:6)

SHCHERBAKOV, V.P.; CHALYY, I.I., mekhanik

Remodeling a cleaning device. Stroi. truboprov. no.9:23 S '64.
(MIRA 17:10)

1. Glavnyy mekhanik Stroitel'nogo upravleniya 2 tresta Omskneftetrovodstroy, Omsk (for Shcherbakov). 2. Stroitel'nogo upravleniye 2 tresta Omskneftetrovodstroy, Omsk (for Chalyy).

RABINOVICH, A.B., inzhener; SHCHERBAKOV, V.P., inzhener; SHAVKIN, G.B., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor.

[Handbook for railroad conductors] Rukovodstvo provodniku passazhirskikh vagonov. Izd. 2-oe, perer. i dop. Moskva, Gos.transp. zhel-dor.izd-vo, 1952. 283 p. [Microfilm] (MLRA 9:7)

1.Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya. (Railroad conductors)

NAYMUSHIN, K.I.; SHCHERBAKOV, V.P., redaktor.

[Extensive repair of railroad passenger cars without uncoupling] Ukrupnennyy bezotstsepochnyy remont passazhirskikh vagonov. Moskva, Gos. transp. zhel-dor. izd-vo, 1953. 26 p. (MLRA 7:4)
(Railroads--Passenger cars--Maintenance and repair)

SHCHERBAKOV V.P.

URYUPIN, G.M., SHCHERBAKOV, V.P., YAKOVLEV, A.K.; SPIVAKOVSKIY, A.L., redaktor; YUDZON, D.M., tekhnicheskiy redaktor

[Heating and ventilation of all-metal railroad passenger cars] Otoplenie i ventiliatsiia tsel'nometallicheskikh passazhirskikh vagonov. Moskva, Gos. transp. zhel-dor. izd-vo 1954. 203 p. (MLRA 7:11)

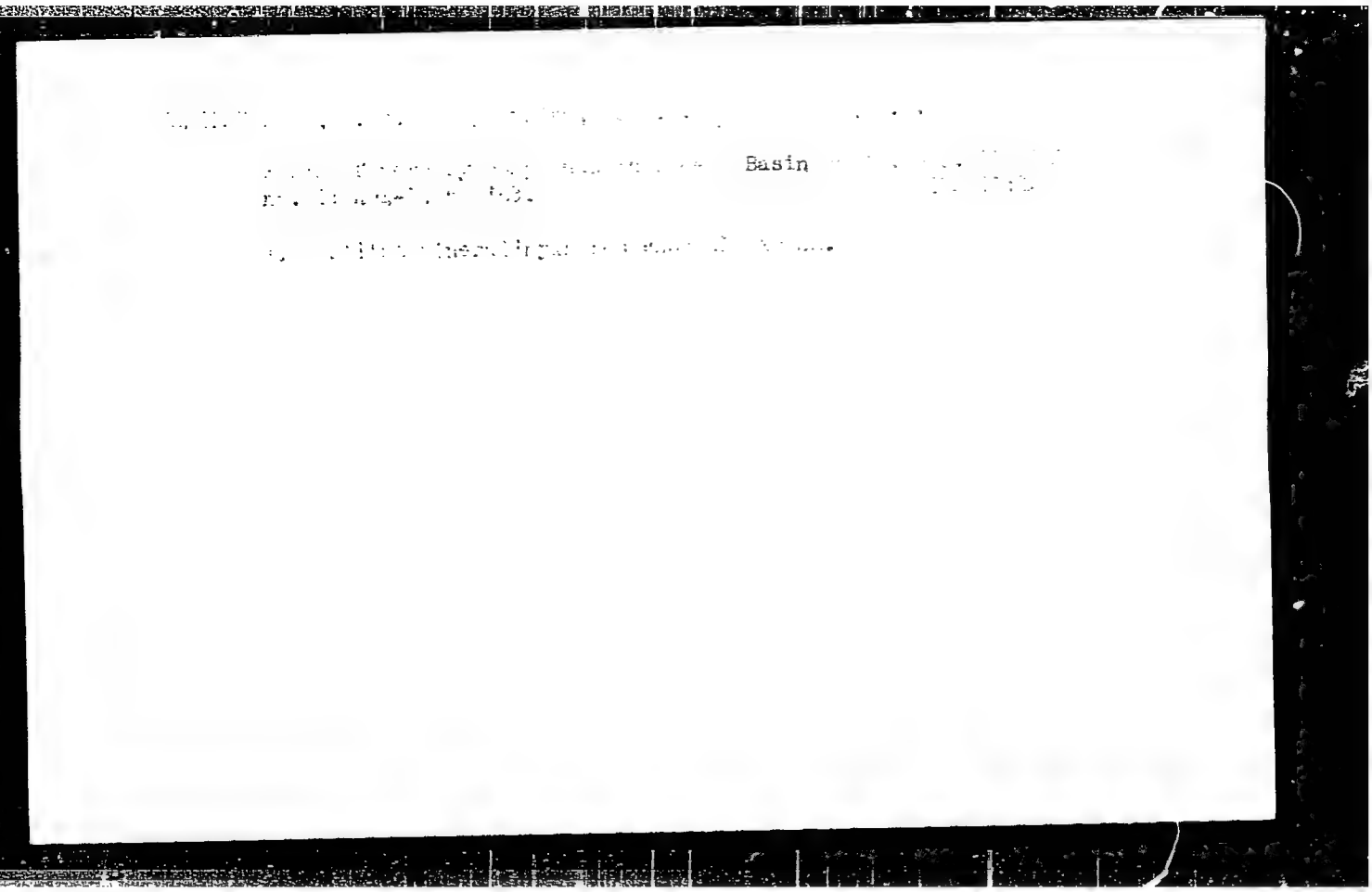
(Railroads--Cars--Heating and ventilation)

SHCHERBAKOV, V.P., inzhener.

Results of experimental operation of air conditioned railroad cars. Zhel. dor. transp. 39 no.3:53-57 Mr '57. (MLRA 10:4)
(Railroads--Cars)

SHCHERBAKOV, Vasiliy Pavlovich, inzh.; RABINOVICH, Anisim Borisovich, inzh.; RYCHCHUK, N.S., inzh., red.; KHITROV, P.A., tekhn. red.

[Manual for the passenger car conductor] Rukovodstvo provodniku passazhirskikh vagonov. Izd. 4., perer. i dop. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1960. 259 p. (MIRA 14:5)
(Railroad conductors) (Railroads--Passenger cars)

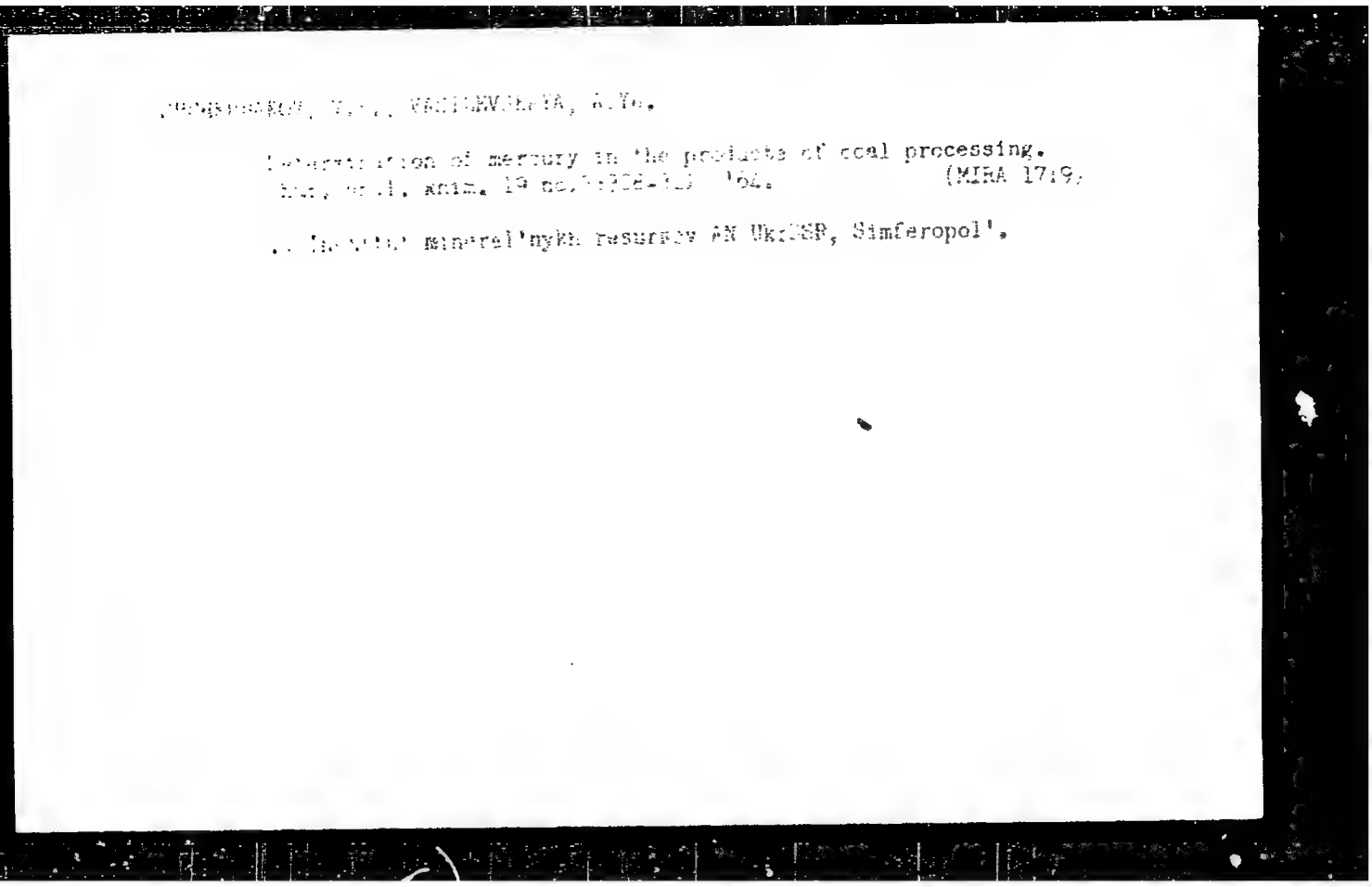


GANTS, N.I.; ZAV'YALOV, I.A.; KRIVOROT'KO, V.M.; SIDOROV, V.I.; OSTRYAKOV, K.I., inzh., retsenzent; SHCHERBAKOV, V.P., inzh., red.; KHITROVA, N.A., tekhn. red.

[Preparing passenger cars for high-speed traffic; experience of the Oktiabr' Railroad] Podgotovka passazhirskikh vagonov dlia skorostnogo dvizheniia; opyt Oktiabr'skoi dorogi. Moskva, Transzheldorizdat, 1963. 47 p. (MIRA 16:10)
(Railroads--Passenger cars)

SLEMZIN, V.I., inzh.; SHCHERBAKOV, V.P., inzh.; DOLMATOV, A.A., kand. tekhn. nauk, retsenzent; BRAYLOVSKIY, N.G., inzh., red.; KHITROVA, N.A., tekhn. red.

[Type KVZ-5 and KVZ-TsNII car trucks; design, maintenance and repair characteristics] Telezhki tipa KVZ-5 i KVZ-TsNII; osobennosti konstruktsii, remonta i tekushchego soderzhaniia. Moskva, Tranzsheldorizdat, 1963. 63 p. (MIRA 16:9)
(Car trucks (Railroads))



[illegible], V.I., VASIL'EVA, A.Ye.

[illegible]ration of mercury in the products of coal processing.
[illegible], ser.1, anim. 19 no.[illegible] '64. (MIRA 17:9)

1. [illegible] Mineral'nykh resursov AN UkrSSR, Simferopol'.

VASILEVSKAYA, A.Ye.; [illegible]; [illegible]

New method for the determination of mercury in coals. Zhur.anal.khim. 19 no.10:1200-1203 '64. (MIRA 17:12)

1. Institute of Mineral Resources, Simferopol.

SHCHERBAKOV, V.P. (Omsk); CHALYY, I.I., mekhanik (Omsk)

Truck-hoister for introducing gunite work inside reinforced concrete tanks. Stroi. truboprov. 9 no.10:27 O '64. (MIRA 18:?)

1. Glavnyy mekhanik SU-2 tresta Omskneftеprovodstroy (for Shcherbakov).
2. Otdel glavnogo mekhanika tresta Omskneftеprovodstroy (for Chalyy).

SHCHERBAKOV, V.

Principles of automatization of cooling systems. Khol.tekh. 31 no.3:23-26 My-S '54. (MLRA 7:9)
(Automatic control) (Refrigeration and refrigerating machinery)

SHCHERBAKOV, V

SHCHERBAKOV, V., inzhener.

Standard plans for the automatization of refrigerating installations with from 1 to 3 refrigerator assemblies. Khol.tekh. 32 no.3:11-18 Jl - S '55. (MLRA 9:1)
(Refrigeration and refrigerating machinery) (Automatic control)

SHCHERBAKOV, V., inzhener.

Standard plans for the automatization of refrigeration plants with astatic step-by-step control. Khol.tekh. 32 no.4:8-16 O-D '55. (MIRA 9:4)
(Refrigeration and refrigerating machinery)(Automatic control)

SHCHERBAKOV, V.S., inzhener.

Simplification of electric drives used in refrigeration compressors. Standartizatsiia no.3:22-25 My-Je '56. (MLRA 9:9)
(Refrigeration and refrigerating machinery--Electric driving)
(Simplification in industry)

SHCHERBAKOV, V., inzhener.

Electric drives for refrigeration compressors. Khol.tekh. 33 no.1:10-16 Ja-Mr '56. (MLRA 9:7)
(Compressors--Electric driving)(Refrigeration and refrigerating machinery)

SHCHUKIN, V. S.

(Central Designing Bureau, Refrigerating Machine Building Industry, Moscow): "Automatic Control of Refrigerating Plants with Ramified Refrigerating Systems" /English - 7 pages/

report presented at the International Inst. of Refrigeration (IIR), Annual Meetings of Commissions 3,4, and 5, Moscow, 3-6 Sep 1958.

SHCHERBAKOV, V., inzh.

Automatic control of low temperature systems [with summary in English]. Khol. tekh. 35 no.1:14-21 Ja-F '58. (MIRA 11:2)
(Refrigeration and refrigerating machinery)
(Automatic control)

VOL'SKAYA, L., inzh.; PAVLOV, R., inzh.; SHCHERBAKOV, V., inzh.

Standard series of automatic equipment for refrigerating machines [with summary in English]. Khol. tekh. 35 no.4:39-44 Jl-Ag '58. (MIRA 11:10)

1.TSentral'noye konstruktorskoye byuro kholodil'nogo mashinostroyeniya.
(Refrigeration and refrigerating machinery)

CHUKAYEV, Dmitriy Sergeyevich; SHCHERBAKOV, Vsevolod Sergeyevich; TSIPERSON, A.L., red.; BABICHEVA, V.V., tekhn.red.

[Electric equipment for refrigeration compressor plants] Elektrooborudovanie kholodil'nykh kompressornykh ustanovok. Moskva, Gos.izd-vo torg.lit-ry, 1959. 22? p. (MIRA 12:5)
(Refrigeration and refrigerating machinery)
(Electric engineering)

ShcherBAKov V.S.

PHASE I BOOK EXPLOITATION SOV/3747

International Congress of Refrigeration. Moscow, 1959

Sovetik dokladov ot SSSR (Collected Soviet Reports) Moscow, Gosstroyizdat, 1959. 214 p. Errata slip inserted. 2,000 copies printed.

Ed. (Title page): Sh. K. Kobulashvili; Ed. (Inside book): S. V. Chichkov; Tech. Ed.: V. V. Rabichev.

PURPOSE: This collection of articles is intended for those interested in the problems of food refrigeration.

COVERAGE: The collection contains 26 reports which were submitted at the 9th Congress of the International Institute of Refrigeration. The meeting was held in Moscow, September 3-6, 1959, and was attended by 265 Soviet specialists and 115 representatives from other countries. The 73 reports discussed at this meeting cover such broad areas as the automation of the cooling of refrigerating installations, the use of finned-tube type refrigerating installations, the use of theory and technique of rapid cooling and freezing of meat and fish, the use of antibiotics in the cold storage of food, and the operation of refrigerators and cooling systems. A complete account of the proceedings of this meeting was published by the International Institute of Refrigeration in 1959. No personalities are mentioned. References follow several of the articles.

TABLE OF CONTENTS:

BADYL'KES, I.S., prof., doktor tekhn.nauk; BUKHTER, Ye.Z., inzh.; VEYNBERG, B.S., kand.tekhn.nauk; VOL'SKAYA, L.S., inzh.; GERSH, S.Ya., prof., doktor tekhn.nauk [deceased]; GUREVICH, Ye.S., inzh.; DANILOVA, G.N., kand.tekhn.nauk; YEFIMOVA, Ye.V., inzh.; IOFFE, D.M., kand.tekhn.nauk; KAN, K.D., kand.tekhn.nauk; LAVROVA, V.V., inzh.; MEDOVAR, L.Ye., inzh.; ROZENFEL'D, L.M., prof., doktor tekhn. nauk; TKACHEV, A.G., prof., doktor tekhn.nauk; TSYRLIN, B.L.; SHUMELISHSKIY, M.G., inzh.; SHCHERBAKOV, V.S., inzh.; YAKOBSON, V.B., kand.tekhn.nauk; GOGOLIN, A.A., retsenzent; GUKHMAN, A.A., retsenzent; KARPOV, A.V., retsenzent; KURYLEV, Ye.S., retsenzent; LIVSHITS, A.B., retsenzent; CHISTYAKOV, F.M., retsenzent; SHEYNDLIN, A.Ye., retsenzent; SHEMSHEDINOV, G.A., retsenzent; PAVLOV, R.V., spetsred.; KOBULASHVILI, Sh.N., glavnyy red.; RYUTOV, D.G., zam.glavnogo red.; GOLOVKIN, N.A., red.; CHIZHOV, G.B., red.; NAZAROV, B.A., glavnyy red.izd-va; NIKOLAYEVA, N.G., red.; EYDINOVA, S.G., mladshiy red.; MEDRISH, D.M., tekhn.red.

[Refrigeration engineering; encyclopedic reference book in three volumes] Kholodil'naia tekhnika; entsiklopedicheskii spravochnik v trekh knigakh. Glav.red. Sh.N.Kobulashvili i dr. Leningrad, Gostorgizdat. Vol.1. [Techniques of the production of artificial cold] Tekhnika proizvodstva iskusstvennogo kholoda. 1960. 544 p. (MIRA 13:12)

(Refrigeration and refrigerating machinery)

ALEKSANDROV, S.V.---(continued) Card 2.
1. Vsesoyuznyy institut rasteniyevodstva (for Sochkarev, Lizgunova, Brezhnev, Gazenbush, Meshcherov, Filov, Tkachenko, Kazakova, Krasochkin, Levandovskaya, Shebalina, Syskova, Makasheva, Ivanov, Martynov, Girenko, Ivanova, Shilova). 2. Gribovskaya ovoshchnaya selektsionnaya opytnaya stantsiya; chleny-korrespondenty Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Alpat'yev, Solov'yeva). 3. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Brezhnev).
(Vegetables--Varieties)

MINEYEV, P.A., inzh.; GUREVICH, Ye.S., inzh.; SHINKA, V.Ya., inzh.; BUKHTER, Ye.Z., inzh.; SHCHERBAKOV, V.S., inzh.; IL'INA, N.I., inzh.; GLUKHOV, V.V., inzh.; GOGOLINA, T.V., inzh.; KROTKOV, V.N., inzh.; STASHIN, Ye.A., inzh.; KUSHNER, A.P., inzh.; YERMAKOVA, P.I., inzh.; PAVLOV, R.V., inzh., red.; KASPEROVICH, N.S., red.izd-va; UVAROVA, A., tekhn. red.

[Catalog of refrigeration equipment] Katalog kholodil'nogo oborudovaniia. Moskva, Mashgiz, 1963. 186 p. (MIRA 16:7)

1. Russia (1923- U.S.S.R.) TSentral'noye konstruktorskoye byuro kholodil'nogo mashinostroyeniya.2. TSentral'noye konstruktorskoye byuro kholodil'nogo mashinostroyeniya (for all except Kasperovich, Uvarova).
(Refrigeration and refrigerating machinery--Catalogs)

ACC NR: AP7002969 (A) SOURCE CODE: UR/0413/66/000/024/0047/0048

INVENTOR: Shcherbakov, V. S.; Bykov, A. V.

ORG: None

TITLE: A device for suspension of the rotor in a turbocompressor. Class 27, No. 189507 [announced by the All-Union Scientific Research, Design and Planning and Technological Institute of Refrigeration Machine Building (Vsesoyuznyy nauchno-issledovatel'skiy proyektno-konstruktorskiy i tekhnologicheskiy institut kholodil'nogo mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 47-48

TOPIC TAGS: turbine compressor, compressor rotor, turbine rotor

ABSTRACT: This Author's Certificate introduces a device for suspension of the rotor in a turbocompressor. The unit contains journal and thrust bearings with stationary rings fixed in the compressor housing and movable rings mounted on the shaft. Design is simplified and reliability is improved by making the movable ring in the form of a magnetic sleeve seated on the shaft. This sleeve has ring-shaped lugs on the outer cylindrical surface and the inner end surface. The stationary ring is made in the form of two ring-shaped electromagnets located in the housing. One of these is located inside the magnetic sleeve and is equipped with ring-shaped lugs located opposite

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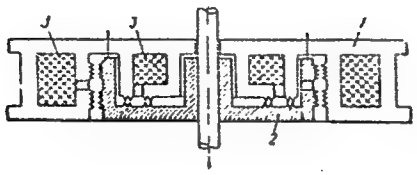
ACC NR: AP7002969

those on the end surface of this sleeve. The other electromagnet is concentric with the magnetic sleeve and is equipped with ring-shaped lugs located opposite those on the outer cylindrical surface of the magnetic sleeve.



1--stationary ring; 2--movable ring; 3--ring-shaped electromagnet

SUB CODE: 13/ SUBM DATE: 19Oct65

Card 2/2

L 1667-66 EWT(d)/T LJP(c)

ACCESSION NR: AP5016670 UR/0388/65/001/001/0022/0030

AUTHOR: Ivanov, V. V.; Shcherbakov, V. T. 44,55 16,44,55

TITLE: Tables of functions encountered in the theory of transfer of resonance radiation. I.

SOURCE: Astrofizika, v. 1, no. 1, 1965, 22-30

TOPIC TAGS: quantum resonance phenomenon, function, mathematic analysis

ABSTRACT: The functions

$$L(\tau) = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{+\infty} \left(1 - e^{-\tau e^{-x^2}}\right) dx \qquad (1)$$

and

$$M_k(\tau) = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{+\infty} e^{-kx^2 - \tau e^{-x^2}} dx \quad (k = 1, 2, \ldots). \qquad (2)$$

must be used when studying the propagation of resonance radiation in a gas. The

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function $L(\tau)$ has a simple physical interpretation. Let there be given a layer of gas whose optical thickness in the center of a line in some direction is equal to τ, and assume that a continuous spectrum of radiation is incident on this layer. If the coefficient of absorption in the line has a Doppler contour, then $L(\tau)$ gives the total number of quanta encountered during passage of even a single absorption event through this layer. Now assume that radiation in a spectral line is incident on this layer. Let the frequency distribution of this radiation be proportional to the coefficient of absorption. If the relationship between the coefficient of absorption and the frequency is determined by the Doppler effect alone, then the number of quanta passing through the layer (without regard to scattering) is equal to $M_1(\tau)$. The function $M_2(\tau)$ determines the kernel of the fundamental integral equation which describes multiple scattering of resonance radiation in a one-dimensional medium. Integration of $M_1(\tau)$ and $M_2(\tau)$ gives functions which are encountered in studies of scattering of resonance radiation in a plane layer. While tables for $L(\tau)$ have been published, the authors know of no such tables for $M_k(\tau)$. This paper is an attempt to remedy this situation. The following formulas are derived for calculating the values of these functions:

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$$M_k(\tau) = \frac{1}{\sqrt{k}} - \frac{\tau}{\sqrt{k+1}} + \frac{\tau^2}{2!\sqrt{k+2}} - \frac{\tau^3}{3!\sqrt{k+3}} + \cdots \quad (3)$$

$$M_k(\tau) \sim \frac{1}{\sqrt{\pi}\,\tau^k \sqrt{\ln \tau}} \left[\Gamma(k) + \frac{1}{2}\Gamma'(k)\frac{1}{\ln \tau} + \right. \quad (4)$$

$$\left. + \frac{1\cdot 3}{2\cdot 4}\Gamma''(k)\frac{1}{\ln^2 \tau} + \frac{1\cdot 3\cdot 5}{2\cdot 4\cdot 6}\Gamma'''(k)\frac{1}{\ln^3 \tau} + \cdots \right],$$

Tables are given for both functions for values of τ between 0 and 1000. The calculations were done on the BESM-2 computer at the Computing Center, Leningrad Department of the Mathematics Institute AN SSSR. The error in the values given is no more than 1 unit in the final decimal place. The values are given to five places. Orig. art. has: 9 formulas, 1 table.

ASSOCIATION: Astronomicheskaya observatoriya LGU (Astronomic Observatory, LGU); Vychislitel'nyy tsentr Leningradskogo otdeleniya Matematicheskogo instituta AN SSSR (Computing Center, Leningrad Department of the Mathematics Institute AN SSSR)

SUBMITTED: 05May64 ENCL: 00 SUB CODE: MA, NP

NO REF SOV: 006 OTHER: 003

Card 3/3 DP

L 1668-66 EWT(d)/T IJP(c)

ACCESSION NR: AP5016671 UR/0388/65/001/001/0031/0037

AUTHOR: Ivanov, V. V.; Shcherbakov, V. T. 44,55 44,55 27 21 B

TITLE: Tables of functions encountered in the theory of transfer of resonance radiation. II. 44,55,16

SOURCE: Astrofizika, v. 1, no. 1, 1965, 31-37

TOPIC TAGS: quantum resonance phenomenon, function, mathematic analysis

ABSTRACT: The paper is a continuation of work on tabulating basic special functions encountered in the theory of radiation transfer. In the first article, the functions

$$M_k(\tau) = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{+\infty} e^{-kx^2 - \tau e^{-x^2}} dx \quad (k = 1, 2, \cdots) \qquad (1)$$

were considered and tables of $M_1(\tau)$ and $M_2(\tau)$ are given for values of τ between 0 and 1000. In this paper, the function

$$N_{kn}(\tau) = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{+\infty} e^{-kx^2} E_n(\tau e^{-x^2}) dx, \qquad (2)$$

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is considered where $E_n(t)$ is the n-th integral power function

$$E_n(t) = \int_0^1 e^{-\frac{t}{\zeta}} \zeta^{n-2} d\zeta. \quad (3)$$

The function $N_{21}(\tau)$ defines the kernel of the fundamental integral equation which describes scattering of resonance radiation in a plane layer and in a uniform sphere. The function $N_{12}(\tau)$ gives the probability that a quantum absorbed in a plane layer at an optical depth τ will pass through the boundary $\tau = 0$ without a single scattering event on its path. The following formulas are derived for calculating these functions:

$$N_{12}(\tau) \sim \frac{1}{\sqrt{\pi\tau}\sqrt{\ln\tau}}\left(0.50000 - \frac{0.26930}{\ln\tau} + \frac{0.57287}{\ln^2\tau} - \frac{1.5663}{\ln^3\tau} + \cdots\right). \quad (4)$$

$$N_{22}(\tau) \sim \frac{1}{\sqrt{\pi\tau^2}\sqrt{\ln\tau}}\left(0.50000 - \frac{0.019304}{\ln\tau} + \frac{0.16892}{\ln^2\tau} - \frac{0.13467}{\ln^3\tau} + \cdots\right). \quad (5)$$

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ACCESSION NR: AP5016671

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The values are tabulated for values of τ between 0 and 100. The calculations were made on the BESM-2 computer at the Computing Center, Leningrad Department of the Mathematics Institute AN SSSR. The error in the values given is no more than 1 unit in the final decimal place. Orig. art. has: 13 formulas, 1 table.

ASSOCIATION: Astronomicheskaya observatoriya LGU (Astronomic Observatory, LGU); Vychislitel'nyy tsenter Leningradskogo otdeleniya Matematicheskogo instituta AN SSSR (Computing Center, Leningrad Department of the Mathematics Institute AN SSSR) 44,55

SUBMITTED: 05May64 ENCL: 00 SUB CODE: MA, NP 44,55

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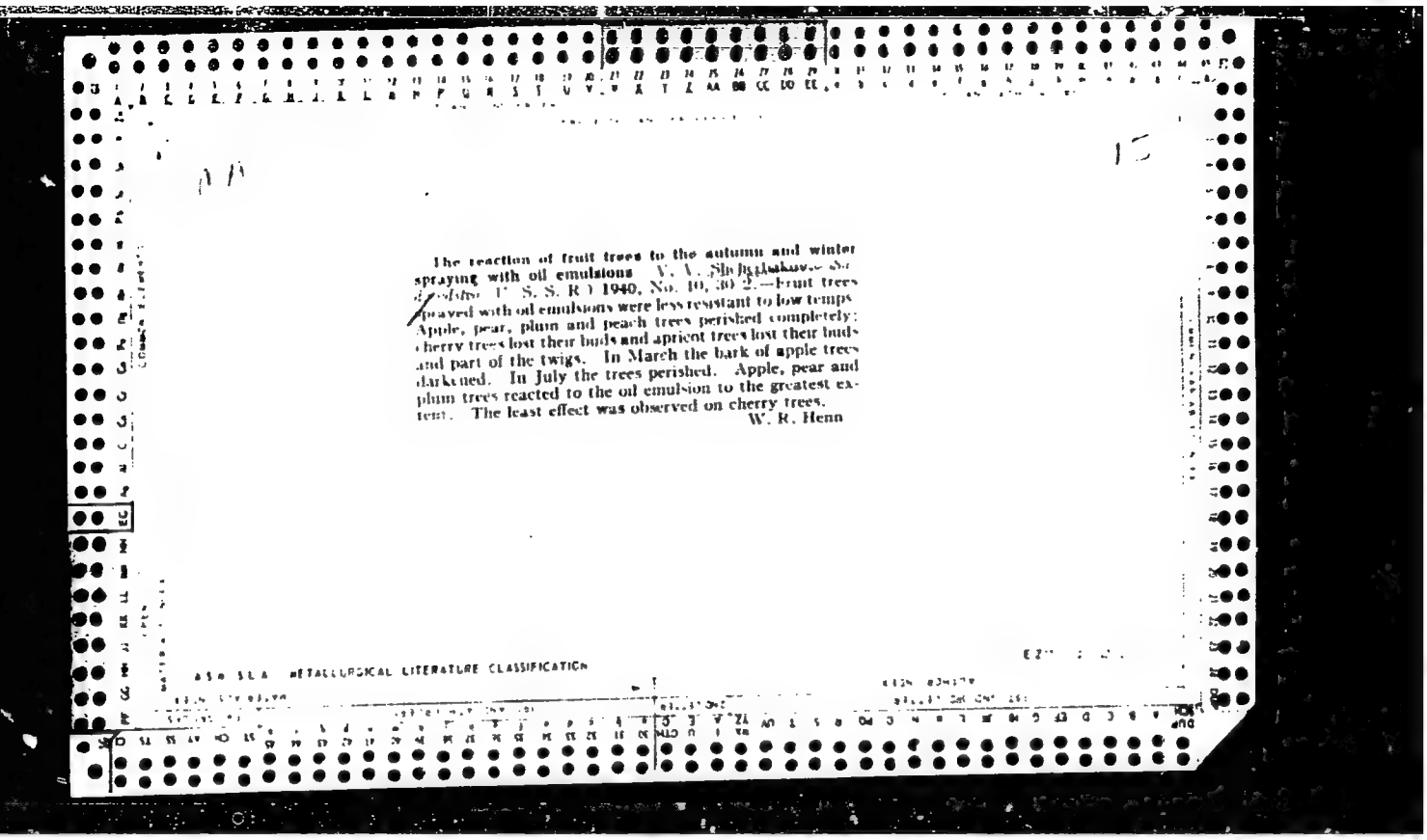
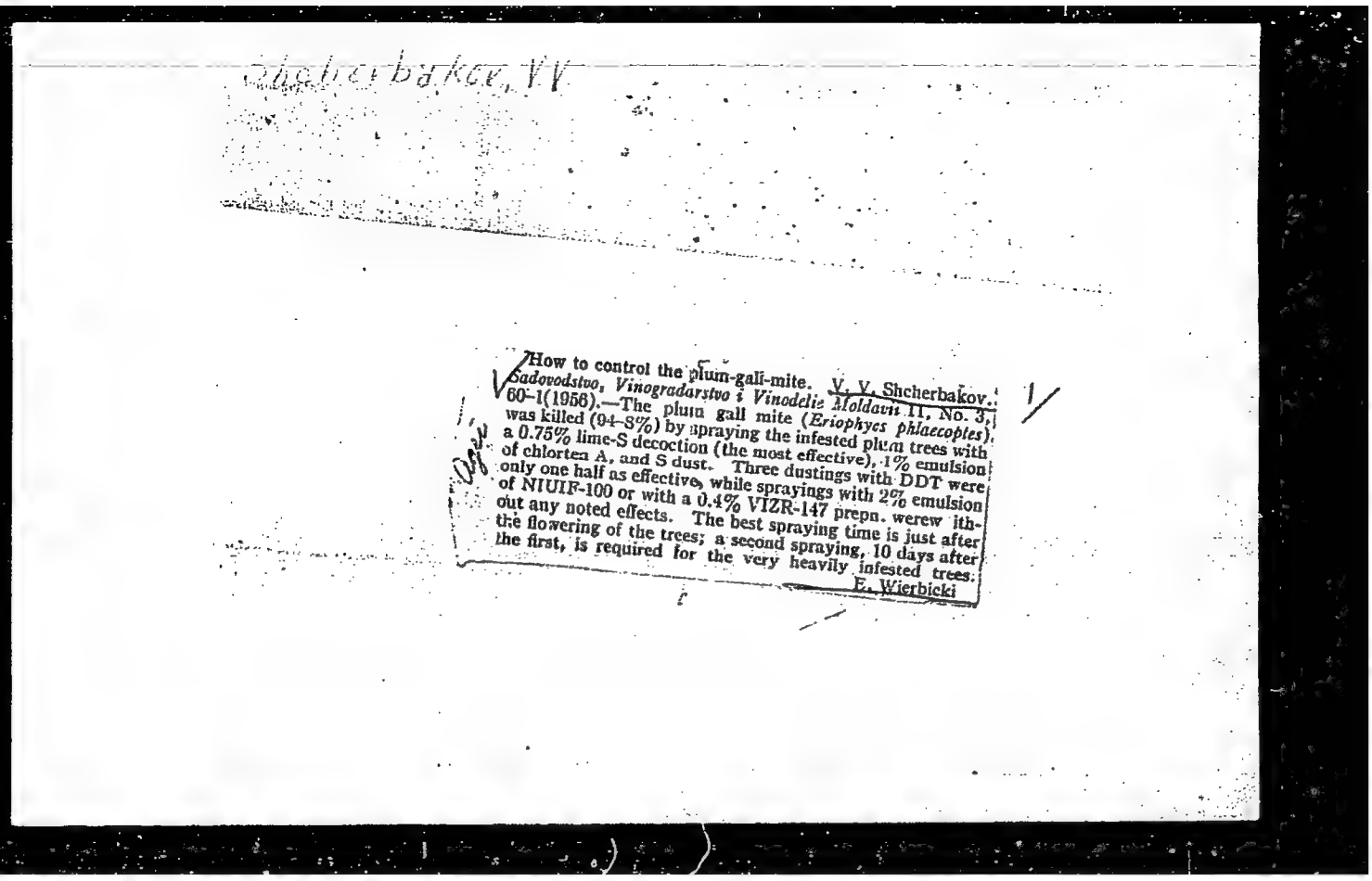
Card 3/3 LP



The reaction of fruit trees to the autumn and winter spraying with oil emulsions V. V. Shchetkanov. Sa[illegible]. U. S. S. R.) 1940, No. 10, 30-2.—Fruit trees sprayed with oil emulsions were less resistant to low temps. Apple, pear, plum and peach trees perished completely; cherry trees lost their buds and apricot trees lost their buds and part of the twigs. In March the bark of apple trees darkened. In July the trees perished. Apple, pear and plum trees reacted to the oil emulsion to the greatest extent. The least effect was observed on cherry trees.

W. R. Henn

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



Shcherbakov, V.V.

How to control the plum-gall-mite. V. V. Shcherbakov. *Sadovodstvo, Vinogradarstvo i Vinodelie Moldavii* 11, No. 3, 60–1(1956).—The plum gall mite (*Eriophyes phlaecoptes*) was killed (94–8%) by spraying the infested plum trees with a 0.75% lime-S decoction (the most effective), 1% emulsion of chlorten A, and S dust. Three dustings with DDT were only one half as effective, while sprayings with 2% emulsion of NIUIF-100 or with a 0.4% VIZR-147 prepn. werew ithout any noted effects. The best spraying time is just after the flowering of the trees; a second spraying, 10 days after the first, is required for the very heavily infested trees.
E. Wierbicki

USSR/Chemical Technology - Chemical Products and Their Applications -- Pesticides. I-7

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8834

Author : Shcherbakov, V.V.
Inst : Melitopolsk Sciences Research Station for Fruit Growing
Title : The Application of DDT and BHC to the Fight Against the Apple Tree and Cherry Tree Aphids.

Orig Pub : Sb. rabot po agrotekhn., selektsii i zashchite rasteniy plodoyagod. kul'tur [Symposium of Articles on the Growing, Selection, and Protection of Fruit Crops] (Melitopol'sk. nauch.-issled. st. polodovodstva), Kiev, Gossel'khozizdat USSR, 1956, 121-126.

Abstract : It has been found that 20% oil concentrates of DDT and BHC used in 0.6 - 3% concentrations

Card 1/2

SHCHERBAKOV, V. V.

USSR/Special and General Zoology - Insects. 0-3

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 69903

Author : Shcherbakov, V.V.
Inst :
Title : The Methods of Control of the Rose Leaf Roller.

Orig Pub : Sb. rabot po agratkhn. seledtsii i zashchite rasteniy plodoyagod. kultur. Kiev, Gossel'khosisdat, UkSSSR, 1956, 137-154

Abstract : For the destruction of eggs before budding the use of a 8 percent machine or solar oil emulsion with clay, or a 4 percent emulsion with these ouls with 0.25 percent of beta-naphthol is recommended; after a severe winter the sensitivity of the trees towards the oils increases, therefore a 6 percent emulsion is used. For the destruction of caterpillars a 3 percent aqueous suspension of five percent DDT dust, or a 1 percent (in concentration) manufactured emulsion of DDT is used. The simplicity and

Card 1/2

USSR/Special and General Zoology - Insects. 0-3

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 69903

effectiveness of this method surpasses the winter spraying. The pit containing fruits should be sprayed after bloom, after the majority of the caterpillars have appeared. The seed fruits should be sprayed either before or after bloom depending on the time of the mass appearance of caterpillars. Butterfly trapping is conducted by attracting them with fermenting syrup (1:4 in aqueous solution) hung in troughs on each tree in the beginning of their flight.

Card 2/2

SHCHERBAKOV, V. V., kand. sel'skokhoz. nauk

Effectiveness of thoroughgoing annual spraying of orchards. Zashch. rast. ot vred. i bol. 5 no.10:9-12 O '60.

1. Opytnaya stantsiya sadovodstva, g. Melitopol'.

(Ukraine—Apple—Diseases and pests)
(Ukraine—Spraying and dusting in agriculture)

SHVETSOVA-SHILOVSKAYA, K.D., starshiy nauchnyy sotrudnik; BOCHARCVA, L.P., starshiy nauchnyy sotrudnik; SHCHERBAKOV, V.V.

Carbamate as insecticide. Zashch. rast. ot vred. i bol. 6 no.9:31 S '61. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut po udobreniyam i insektofungisidam imeni Samoylova (for Shvetsova-Shilovskaya, Bocharova).
2. Zaveduyushchiy otdelom zashchity rasteniy Melitopol'skoy opytnoy stantsii sadovodstva (for Shcherbakov).
(Sevin)

SAVKOVSKIY, P.P., nauchn. sotr.; ISAYEVA, Ye.V., nauchn. sotr.; OLIFER, A.V., nauchn. sotr.; SHCHERBAKOV, V.V., nauchn. sotr.; POVZUN, I.D., nauchn. sotr.; MASLO, Ye.M., nauchn. sotr.; KRYLOVA, A.S., nauchn. sotr.; MATVIYEVSKIY, A.S., nauchn. sotr.; VASIL'KOVA, A.K., nauchn. sotr.; VOVCHENKO, D.P., nauchn. sotr.; BOGDAN, L.I., nauchn. sotr.; GROTTE, G.M., nauchn. sotr.; SKUTSKAYA, N.P., red.; DAKHNO, Yu.B., tekhn. red.

[Pests and diseases of fruit and berry crops] Vrediteli i bolezni plodovo-iagodnykh kul'tur; spravochnik. Kiev, Izd-vo AN Ukr.SSR, 1962. 275 p. (MIRA 16:7)
(Fruit—Diseases and pests)

ATLAS, M.S., prof., red.; REUEL', A.L., prof., red.; SHCHERBAKOV, V.V., dots., red.; MAKSIMOVA, L., red.

[Methodology for teaching economics in economics schools of higher learning] Metodika prepodavaniia politicheskoi ekonomii v ekonomicheskikh vuzakh. Moskva, M-vo vysshego i srednego spetsial'nogo obrazovaniia RSFSR, 1961. 188 p. (MIRA 14:11)

1. Moskovskiy finansovyy institut (for Maksimova).
(Economics—Study and teaching)

SHCHERBAKOV, V.V., inzh.

Laying siphons during winter using the self-submersion method. Nov. tekh. i pered. op. v stroi. 19 no.9:7-10 S '57. (MIRA 10:11)
(Pipelines)

SHCHERBAKOV, V.V., inzh.

Laying 1500 mm pipes by the method of free submersion. Nov. tekh. mont. i spets. rab. v stroi. 21 no.8:13-16 Ag '59.
(MIRA 12:10)

1.Trest Gidrospetsfundamentstroy Minstroya RSFSR.
(Pipelines)

SHCHERBAKOV, V.V., inzh.

Construction of water intake installations on the Vyatka River. Nov. tekh. mont. i spets. rab. v stroi. 21:20-22 Je '59. (MIRA 12:8)

1. Trest Gidropetsfundamentstroy Minstroya RSFSR.
(Hydraulic engineering) (Precast concrete construction)

SHCHERBAKOV, V.V.

Using diamond cutting tools in the machinery industry in the U.S.A.
Biul.tekh.-ekon.inform. no.11:92-96 '61. (MIRA 14:12)
(United States--Diamonds, Industrial)
(Metal-cutting tools)

SHCHERBAKOV, V.V.

High-production cutting tools and their use. Biul.tekh.-ekon.-inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. no.3:83-87 '62. (MIRA 15:5)

(Metal cutting tools)

ANTONOV, S.N., inzh.; SHCHERBAKOV, V.V., inzh.; KHOROBRYKH, G.A., tekhnik

Technology of preparing large welded sections for the construction of hydraulic turbines. [Trudy]LMZ no.11:140-151 '64.

(MIRA 17:12)

ANTONOV, S.N., inzh.; SHCHERBAKOV, V.V., inzh.; MARKOV, N.I., tekhnik

Manufacture of welded diaphragms. [Trudy]LMZ no.11:299-314 '64.
(MIRA 17:12)

SAVKOVSKIY, P.P., nauchn. sotr.; ISAYEVA, Ye.V., nauchn. sotr.; OLIFER, A.V., nauchn. sotr.; SHCHERBAKOV, V.V., nauchn. sotr.; POVZUN, I.D., nauchn. sotr.; MASLO, Ye.M., nauchn. sotr.; KRYLOVA, A.S., nauchn. sotr.; MATVIYEVSKIY, A.S., nauchn. sotr.; VASIL'KOVA, A.K., nauchn. sotr.; VOVCHENKO D.P., nauchn. sotr.; BOGDAN, L.I., nauchn. sotr.; GROTTE M.G., nauchn. sotr.; CHEPUR, N.D., red.

[Pests and diseases of fruit and berry plants; a manual] Vrediteli i bolezni plodovo-iagodnykh kul'tur; spravochnik. Kiev, Naukova dumka, 1965. 287 p. (MIRA 18:9)

SHCHERBAKOV, Ye.

SHCHERBAKOV, Ye., inzhener.

Small capacity ammonia system of direct expansion with cascade type batteries. Khol.tekh. 31 no.2:18-21 Ap-Je '54. (MLRA 7:7)
(Refrigeration and refrigerating machinery)

SHCHERBAKOV, Ye.I., master

Remote control of welding apparatus. Mekh. i tepl. tiaga 4 no.11: 22 N '60. (MIRA 13:12)
(Electric welding) (Remote control)

SHCHERBAKOV, Ye.

What should a social insurance delegate do. Okhr.truda i sots.strakh. 4 no.12:31-32 D '61. (MIRA 14:11)
(Industrial hygiene)

SHCHERBAKOV, Ye., inzhener-kapitan 3-go ranga

The sea does not tolerate conditional actions. Starsh.-serzh. no.9:9 S '62. (MIRA 15:11)

(Naval education)

SLAVUTSKIY, Aleksandr Kel'manovich, kand. tekhn. nauk, dots.; YELENOVICH, Aleksey Savel'yevich, kand. tekhn. nauk, dots.; KURDENKOV, Boris Ivanovich, inzh.; ROMADANOV, Georgiy Afanas'yevich, kand. tekhn. nauk; Prinimali uchastiye: BRYKALOV, I.I., inzh.; MASHIN, K.P., inzh.; SOROKIN, I.G., inzh.; SHCHERBAKOV, Ye.I., inzh.; IL'INA, L.N., red.

[Road toppings made of local materials] Dorozhnye odezhdy iz mestnykh materialov. Moskva, Transport, 1965. 270 p. (MIRA 18:7)

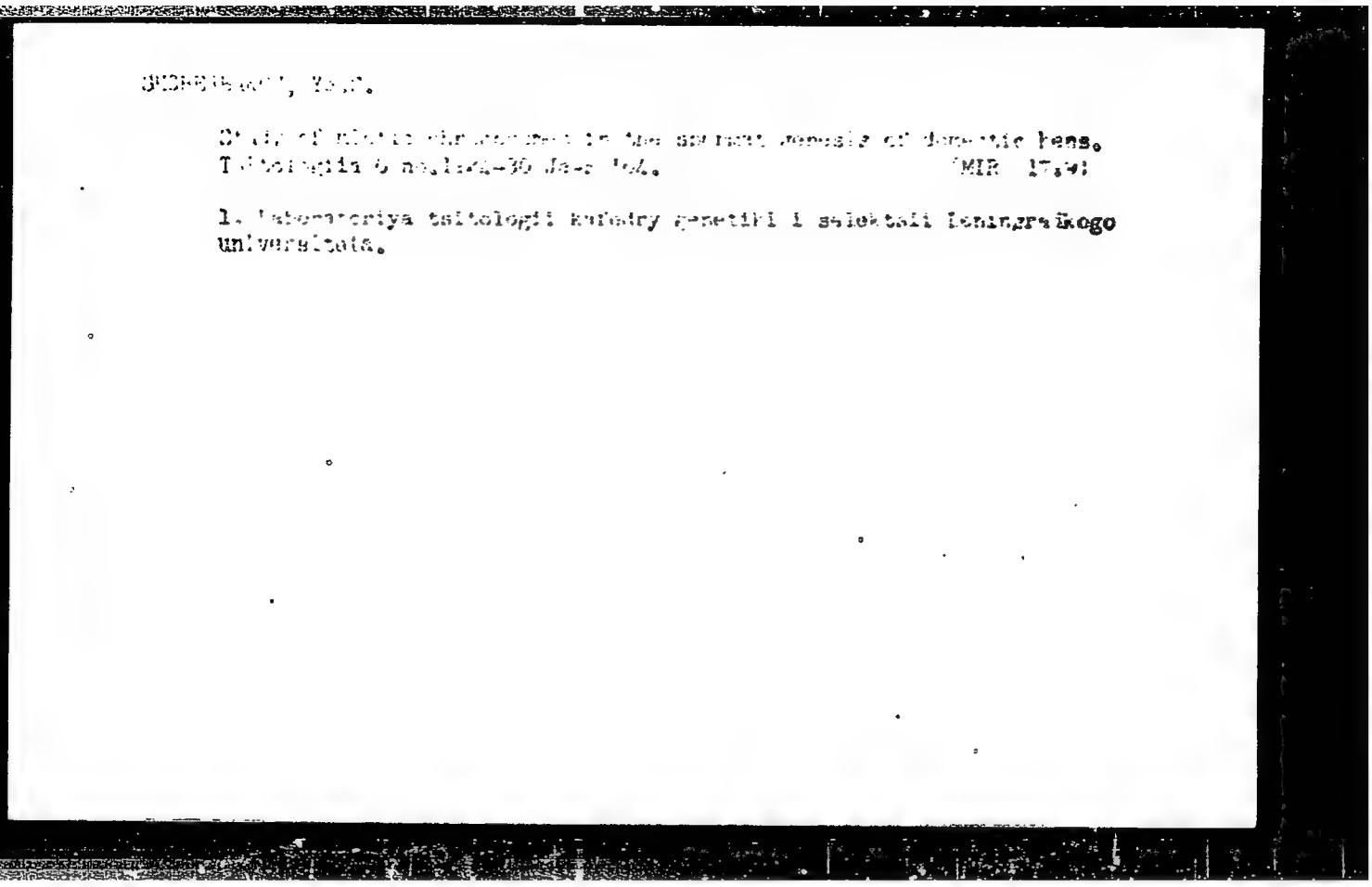
BERG, O.Yá., doktor tekhn.nauk, prof.; PISANKO, G.N., kand.tekhn.nauk; SMOL'YANINOV, A.A., kand.tekhn.nauk; SHCHERBAKOV, Ye.N., inzh.

Causes of the formation of longitudinal cracks in centrifuged supports of overhead contact systems. Transp.stroi. 15 no.10:42-46 O '65. (MIRA 18:12).

CHUBAREVA, L.A.; SHCHERBAKOV, Ye.S.

Study of karyotypes of some blackfly specie: (family Simuliidae). Dokl. AN SSSR 153 no.5:1183-1185 D '63.
(MIRA 17:1)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova. Predstavleno akademikom V.N. Chernigovskim.



SHCHERBAKOV, Ye.S.

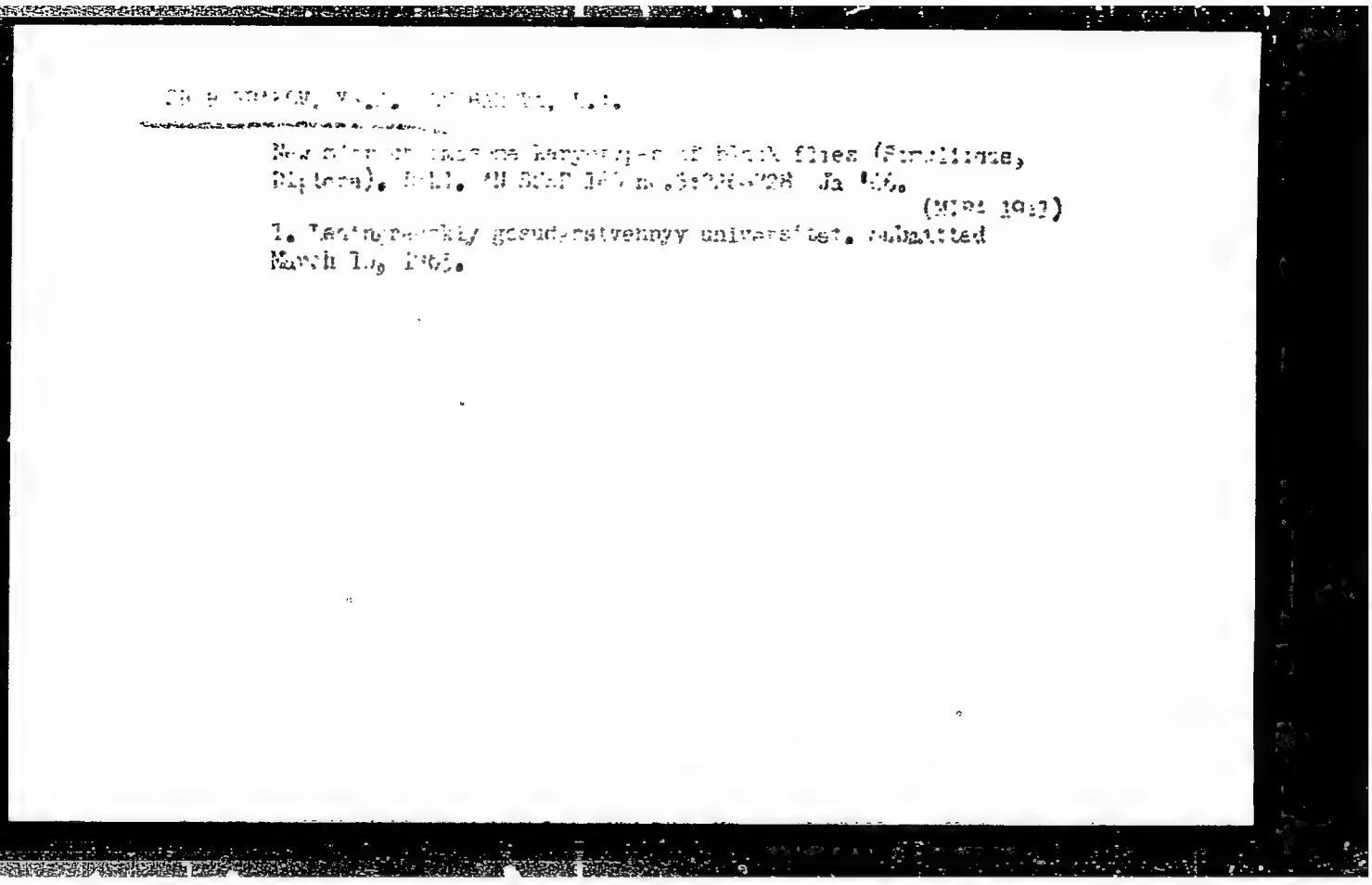
Adaptive value of inversions in the karyotypes of Simulium möllari Fried. Genetika no. 6:98-102 D '65 (MIRA 19:1)

1. Leningradskiy gosudarstvennyy universitet, kafedra genetiki i selektsii.

SHCHERBAKOV, Ye.S.

Spontaneous translocation of a part of nucleolar organizer in the natural population of Simulium nölleri Fried (Diptera). Vest. LGU 20 no.21:154-155 '65.

(MIRA 18:12)



[illegible], Ye. V.

USSR Medicine - Veterinary, Drugs; Strangles

Card 1/1

Author : Shcherbakov, Ye. V., Senior Veterinary Physician

Title : Sulfanthrol therapy of strangles in horses

Periodical : Veterinariya, 31, 48, Apr 1954

Abstract : Malignant form of strangles in horses can be successfully treated by means of intravenous administration of 4% well filtered solution of sulfanthrol. About 100 young horses and adult horses (5-20 years of age) were treated with sulfanthrol in 1952. Majority of these horses recovered from malignant form of strangles after intravenous administration of the drug once each day for a period of 5-6 days. Effective single dose of sulfanthrol is between 30 and 100 ml, depending on age of the animal.

Institution : Machine-Tractor Station (MTS) imeni Stalin, Genicheskiy Rayon, Khersonskaya Oblast.

Submitted :

SHCHERBAKOV, Ye.V.

The Skadovsk district veterinary hospital is participating in the All-Union Agricultural Exhibition in 1955. Veterinariia 32 no.9:19-21 S '55. (MIRA 8:12)

1.Nachal'nik Vetotdela Khersonskogo oblupravleniya sel'skogo khozyaystva.
(SKADOVSK--VETERINARY HOSPITALS)

YERMOSHIN, T.F., inzh.; SHCHERBAKOV, Ye.V., vetvrach

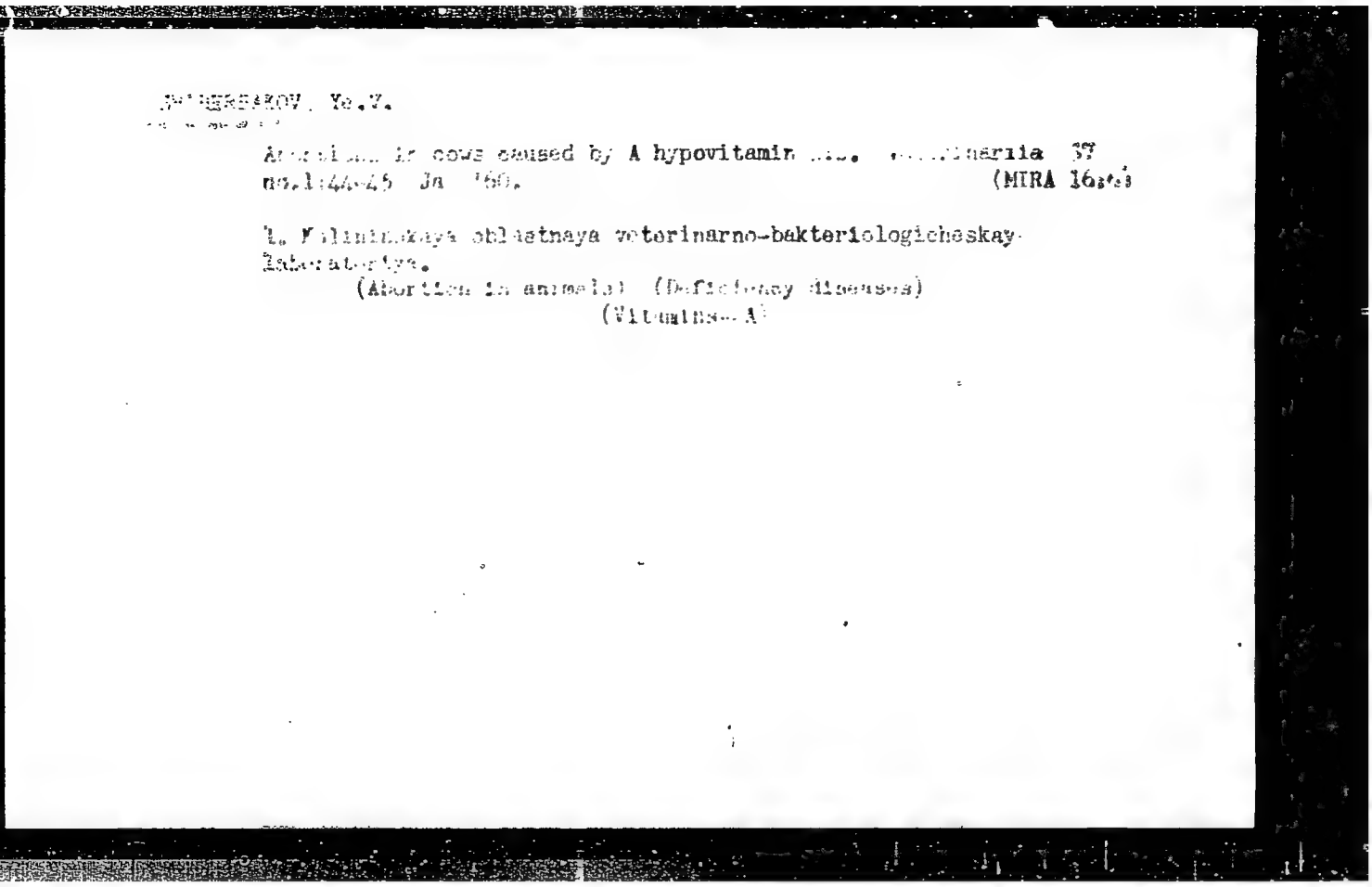
Something new in the use of vitaminized skim milk. Zhivotnovodstvo 21 no.1:61-64 Ja '59. (MIRA 12:2)
(Milk as feeding stuff) (Skim milk)
(Deficiency diseases in domestic animals)

[illegible] 1, [illegible] 1.

"A-hypovitaminosious cow abortions."

Veterinariya, Vol. 37, No. 1, 1960, p. 44

Kalinin Oblast Vet-Bacteriol Lab



[illegible]GERSKOV, Ye.V.

Abortion in cows caused by A hypovitamin[illegible]. [illegible]inariia 37 no.1:44-45 Ja '60. (MIRA 16:4)

1. Vilnyusskaya oblastnaya veterinarno-bakteriologicheskaya laboratoriya.
(Abortion in animals) (Deficiency diseases)
(Vitamins--A)

GOLOVANOV, O.V., inzh.; KUVSHINOVA, A.I., inzh.; CHCHERBAKOV, Ye.Ye., inzh.

Automatic production of polyethylene. Mekh. i avtom. proizv. 17 no. 4:13-16 Ap '63. (MIRA 17:9)

KIRILLOV, M.V., otv. red.; SHCHERBAKOV, Yu.A., otv. red.; LIVSHITS,L., red. izd-va; GIL'DEBRANT, Ye., tekhn. red.

[Krasnoyarsk Territory; natural and economic geographical regionalization]Krasnoiarskii krai; prirodnoe i ekonomiko-geograficheskoe raionirovanie. Krasnoiarsk, Krasnoiarskoe knizhnoe izd-vo, 1962. 401 p. (MIRA 15:11)
(Krasnoyarsk Territory—Economic geography)

SHCHERBAKOV, Yu.A.

Influence of the Western Sayan Mountains on the climate of the Koybal'skaya Steppe. Vest.Mosk.un.Ser.5: Geog. 17 no.3:74-75 My-Je '62. (MIRA 15:8)

(Koybal'skaya Steppe—Climate)

BABAYEVA, Nina Fedorovna; YEROFEYEV, Valentin Mikhaylovich; SIVOKONENKO, Igor' Mikhaylovich; KHOVANSKIY, Yuriy Mikhaylovich; YAVLENSKIY, Konstantin Nikolayevich; SHCHERBAKOV, Yu.A., inzh., retsenzent; SAYDOV, A.A., doktor tekhn.nauk, retsenzent; SLIV, E.I., kand.tekhn. nauk, retsenzent; KOPTYAYEV, P.P., kand.tekhn.nauk, nauchnyy red.; ORLOV, V.P., inzh., nauchnyy red.; NIKITINA, M.I., red.; TSAL, R.K., tekhn.red.

[Parts and elements of gyroscopic instruments] Detali i elementy giroskopicheskikh priborov. By N.F.Babaeva i dr. Leningrad, Sudpromgiz, 1962. 497 p. (MIRA 15:5)
(Gyroscopic instruments)

[illegible], M. A.

[illegible], Yu. A.

"[illegible] Regional Divisions of the Veshchera in Connection with the Problems of Agricultural Control." Moscow Order of Lenin State [illegible] V. V. Tarnovskiy. Moscow, 1955 (Dissertation for the degree of Candidate in Geographical Sciences)

SO: Letopis' Zhurnal'nykh Statey, No. 27, 2 July 1956

SHCHERBAKOV, Yu.A.

Reclamation of Meshchera. Geog.v shkole 19 no.5:14-20 S-O '56.
(Meshchera--Reclamation of land)
(MLRA 9:11)

PARMUZIN, Yu.P.; KIRILLOV, M.V.; SHCHERBAKOV, Yu.A.

Some results of dividing central Siberia and Krasnoyarsk Province into physicogeographical regions. Vop. geog. no.55:91-106 '61. (MIRA 15:1)

(Siberia, Eastern--Physical geography)

SHCHERBAKOV, Yu.A.

Some features of the water supply of Meshchera Lowland rivers. Vest. Mosk. un. Ser. 5: Geog. 16 no. 3:61 My-Je '61. (MIRA 14:5)

(Meshchera--Runoff)

SHCHERBAKOV, Yu.A.; KIRILLOV, M.V.

The system of the physicogeographical regionalization of Krasnoyarsk Territory. Sib.geog.sbor. no.1:119-130 '62. (MIRA 16:2)

(Krasnoyarsk Territory--Physical geography)

SHCHERBAKOV, Yu.A. (Perm')

Causes of the bogging up of woodlands of the East European Plain. Geog. v shkole 25 no.6:17-20 N-D '62. (MIRA 15:12)
(East European Plain--Swamps)

SHCHERBAKOV, Yu. A.

USSR/Physics - Ionization chamber

FD-743

Card 1/1 : Pub 146-13/22

Author : Lyapidevskiy, V. K., and Shcherbakov, Yu. A.

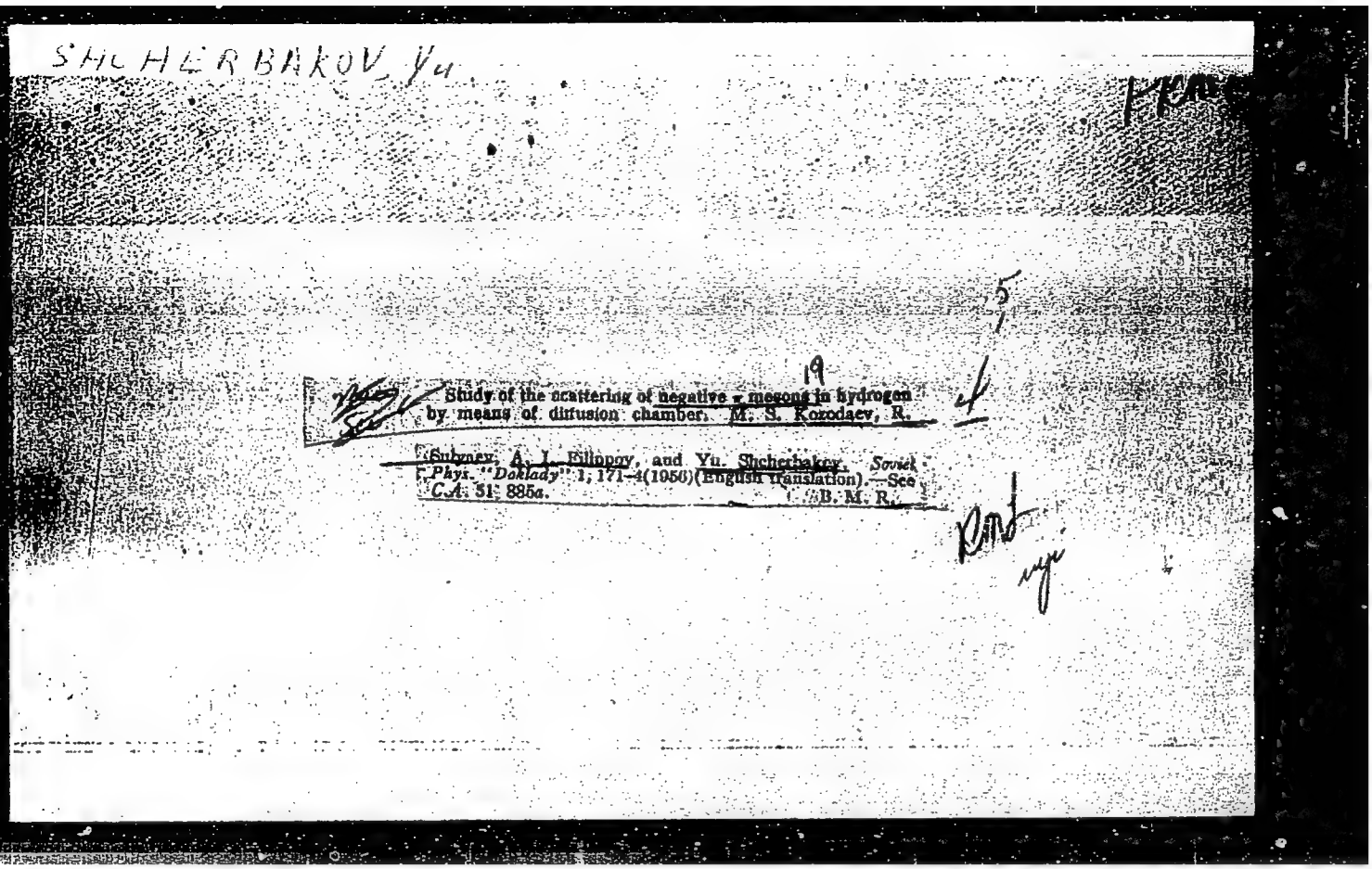
Title : Study of the operation of a diffusion-condensation chamber

Periodical : Zhur. eksp. i teor. fiz., 27, 103-109, Jul 1954

Abstract : The operation of a rectangular diffusion-condensation chamber filled with air and alcohol vapor at atmospheric pressure was studied. Analysis of the vertical temperature distribution revealed that the heat exchange with the side walls of the chamber is a decisive factor. The chamber was found to work steadily at various temperatures. Photographs of ionizing particles are presented. Indebted to M. S. Kozodayev. 6 foreign references.

Institution : Moscow Engineering Physics Institute

Submitted : August 5, 1953



SHCHERBAKOV, Yu.

Study of the scattering of negative π mesons in hydrogen by means of diffusion chamber. M. S. Kozodaev, R. Subyev, A. I. Filippov, and Yu. Shcherbakov. *Soviet Phys. "Doklady"* 1, 171–4(1956)(English translation).—See *C.A.* 51: 885a.

B. M. R.

SHCHERBAKOV, Yu. A.

Reaction between negative pions with helium nuclei at an energy of 330 m.e.v. M. S. Kozodaev, R. M. Sulyaev, A. I. Filippov, and Yu. A. Shcherbakov. *Zhur. Eksper. i Teoret. Fiz.* 31, 701–3(1956).—The results are given for the study of the reaction between π mesons and α-particles. The total cross section was detd. as $(150 \pm 15) \times 10^{-27}$ sq. cm. The cross sections for the various processes which can take place are evaluated. J. Rovtar Leach

Joint Inst. Nuclear Research

Shcherbakov, Yu

Category : USSR/Nuclear Physics - Elementary Particles C-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 391

Author : Kozodayev, M., Sulyayev, P., Filippov, A., Shcherbakov, Yu.
Inst : Inst. of Nuclear Problems, USSR Acad, of Sciences
Title : Study of the Scattering of Negative π-Mesons in Hydrogen with the Aid of a Diffusion Chamber.

Orig Pub : Dokl. AN SSSR, 1956, 107, No 2, 236-239

Abstract : Elastic scattering of 330±6 Mev π^--mesons was studied. Eleven cases of elastic scattering by protons and 13 cases of charge exchange were obtained. The corresponding cross sections are 11 ± 4 and 13 ± 4 millibarns, and the total section is 24 ± 5 millibarns. The ratio $\sigma_{ch.e}/\sigma_{elast.}$ = 1.2 ± 05, while at lower energies it equals 2. The change in the value of the ratio $\sigma_{ch.e}/\sigma_{elast.}$ indicates that for 330-Mev π^--mesons one no longer sees a predominant interaction in the state with isotopic spin 3/2; the interaction in the state with T = 1/2 becomes just as important.

Card : 1/1

SHCHERBAKOV, Yu. A.

19 19
ELASTIC SCATTERING OF π^+ AND π^- MESONS ON He NUCLEI AT 300 MEV. M. G. Kozodaev, E. M. Silvaev, A. I. Filippov, and Yu. A. Shcherbakov, Joint Institute of Nuclear Research, Laboratory of Nuclear Problems. 1957. 7p. (In Russian)

Investigations were made of the elastic scattering of π^+ and π^- mesons in the He nuclei at 300 Mev to determine the angular distribution and to check the previous conclusions about the effects of Coulomb interference. (R.V.J.)

7
1-Russ
1-Gen
4E4c
4G3b

11

Russ

SHCHERBAKOV, Yu. A.

19

INTERACTION BETWEEN NEGATIVE PIONS AND HELIUM NUCLEI AT 330 Mev ENERGY. M. S. Kozodaev, R. M. Sulaev, A. I. Filippov, and Iu. A. Shcherbakov. Soviet Phys. JETP 4, 580-2(1957) May.

The results of an analysis of 97 events of interaction obtained from an examination of approximately 13,000 photographs are given. The cross sections obtained in the various processes are included. (M.H.R.)

120-6-7/36

AUTHORS: Vasilenko, A.T., Kozodayev, M.S., Sulyayev, R.M., Filippov, A.I. and Shcherbakov, Yu.A.

TITLE: Reprojector for Evaluating Stereographic Exposures (Reproyektor dlya obrabotki stereofotografiy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 34 - 37 (USSR)

ABSTRACT: Due to the development of methods of recording nuclear processes by means of diffusion and bubble chambers, it is possible to obtain within a relatively short time hundreds of thousands of photographs depicting the traces of charged particles. As a result of this, the people concerned with the experiments are faced with the problem of using effective methods of evaluation of the obtained material. Usually, it is necessary to determine the co-ordinates of some points, the curvatures of the traces and the spatial angle between some such traces. In this paper, an instrument is described for measuring the spatial co-ordinates, the angles and curvatures of the trajectories of charged particles by reproducing the traces of the particles photographed on two stereoscopic exposures by the method of reprojection on to a mobile screen, using the same optical system which was used for taking photographs. This permits observation on the instrument screens

Card 1/2

Shcherbakov, Yu.A.

56-4-35/54

AUTHORS: Kozodayev, M.S., Sulyayev, R.M., Filippov, A.I., Shcherbakov, Yu.A.

TITLE: The Elastic Scattering of $\pi^{\pm}$-Mesons on Helium Nuclei at an Energy of 300 MeV (Uprugoye rasseyaniye $\pi^{\pm}$ - mezonov na yadrakh geliya pri energii 300 MeV)(Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, pp. 1047 - 1049 (USSR)

ABSTRACT: The elastic scattering was investigated by means of a diffusion chamber (filled with helium of 15 atmospheres absolute pressure). 24000 photographs were taken and investigated for π^--mesons with 300 $\pm$ 6 MeV and 11000 photographs for π^+-mesons with 273 $\pm$ 7 MeV. The absolute scattering cross section for the π^- - mesons was measured with 45 $\pm$ 5 mb and that for π^+ - mesons with 72 $\pm$ 11 mb. From the measured angular distribution it may be concluded that on the occasion of the scattering within small angles an interference effect is present between the coulombian scattering and the nuclear scattering. In a supplement the authors define their attitude regarding the recently again discussed problem that the π-mesons have a spin differ-

Card 1/2

SOV/120-58-6-8/32

AUTHORS: Kozodayev, M.S., Kulyukin, M. M., Sulyayev, R. M., Filippov, A. I. and Shcherbakov, Yu. A.

TITLE: A High Pressure Diffusion Chamber in a Pulsed Magnetic Field (Diffuzionnaya kamera vysokogo davleniya v impul'snom magnitnom pole)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 47-55 (USSR)

ABSTRACT: At the present time diffusion chambers are widely used in studies with accelerators. They have turned out to be sufficiently efficient for studying the interaction of neucleons and mesons with separate neucleons and light nuclei (Refs.1 and 2). An installation is described in the present paper which includes a diffusion chamber in a magnetic field which has been used in studying the interaction of protons and mesons with light nuclei. In distinction to other chambers, e.g. those described in Refs.4-6, the necessary temperature distribution in the sensitive layer is set up by means of an internal plexiglass cylinder, as described by Kozodayev et al (Refs.7 and 8). By this means it is possible to reduce the magnitude of horizontal gradients which are the main source of undesirable convections in the chamber. Such a reduction in convective distortion of tracks leads to an increase in the

Card 1/4

A High Pressure Diffusion Chamber in a Pulsed Magnetic Field

accuracy in the measurement of momenta. Because of the strong equalising action of the plexiglass cylinder it was found possible to reduce the distance between the side boundaries of the sensitive layer and the outer walls of the chamber and thus improve the utilisation of the working volume of the magnet. Such a construction of the windows means that it is possible to remove the chamber from the magnet without dismantling the latter. It also means that it is possible to use selenoid magnets with small gaps between the coils which in turn makes it easier to obtain large magnetic fields with good homogeneity and economy of supplies. The installation described in this paper consists of a selenoid magnet MS-4, a system for evacuating and filling the chamber and a control panel which controls the accelerator, the chamber and the magnet. The external view of the installation is shown in Fig.1. The chamber was built in 1955 (Ref.3). The diameter of the working region of the chamber is 30 cm, the external diameter being 45.6 cm. The chamber was designed

A High Pressure Diffusion Chamber in a Pulsed Magnetic Field

For work with light gases such as hydrogen, deuterium and helium at pressures up to 25 atm. The magnetic field in the sensitive region, which is produced by the selenoid magnet, MS-4, reaches up to 11 200 oersted, in continuous operation and 16 000 oersted in pulsed operation. The MS-4 magnet is illustrated in Fig.2, in which 1 is the photographic camera, 2 is the chamber, 3 are illuminators and 4 is the coil of the selenoid. There are 2 coils which consist of sectionalised windings of copper tubes. The gap between the coils in the magnet may be varied between 50 and 100 mm. The windings are cooled by distilled water under pressure of 5 atm. A sectional drawing of the diffusion chamber itself is given in Fig.4. The body of the chamber, 1 , is of stainless steel, and is made from a single piece. Tubes are attached to the lower part of the body at 2 , in which acetone is circulating and thus cools the body. A reservoir, 4 , is included and collects condensed methyl alcohol, which is the working liquid. At the bottom of the chamber there is a copper disc, 5 , which is used to equalise the temperature. The surface of the disc is electrolytically blackened. A pleviglass cylinder 7 is set up on this disc and,

 as was mentioned above, this cylinder produces the necessary

VOLOSHCHUK, V.I.; KUZNETSOV, V.V.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Measurement of particle ionization by the relative photometry of track photographs. Prib. i tekh. eksp. no.3:34-36 My-Je '60. (MIRA 14:10)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Photography, Particle track)
(Ionization)

VASILENKO, A.T.; KULYUKIN, M.M.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Semiautomatic comparator for processing stereoscopic photographs. Prib.i tekh.eksp. no.4:56-63 Jl-Ag '60. (MIRA 13:9)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Electronic measurements)
(Photography, Particle track)

KOZODAYEV, M.S.; KLYUKIN, M.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Inelastic interaction of $K^{\pm}$-mesons with helium nuclei at an energy of about 300 Mev. Zhur.eksp.i teor.fiz. 38 no.2:409-422 F '60. (MIRA 14:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons) (Helium)

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B006/B014

24-6100

AUTHORS: Romodanov, V. L., Kulyukin, K. M., Kulyukov, V. A., Pilipenko, G. I., Shcherbakov, Yu. A.

TITLE: Interaction of Protons With He^4 Nuclei at an Energy of 630 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 3, pp. 706-715

TEXT: In the present paper the authors report on their investigations of the scattering of 630 Mev protons on helium nuclei. These investigations were conducted with a high-pressure diffusion cloud chamber. This method made it possible to investigate elastic and inelastic scattering in one and the same experiment. Fig. 1 provides a scheme of the experimental setup. The effective helium area was 30 cm in diameter, and the height of the sensitive layer was 5 - 7 cm. The chamber was filled with helium up to 15 - 20 atm. The proton energy was a little lower than the external energy supplied by the synchrocyclotron, and amounted to (630±15) Mev. A picture was taken every 15 - 20 sec, and a total of 20,000 stereophotographs was thus obtained. Interaction events were isolated by interpreting the pictures three times with a stereocomparator.

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a total of 445 scatterings of protons on helium nuclei was found. For the most part, interactions were found in two- and three-pronged stars, while only 6 and 4 interactions were found in four- and five-pronged stars, respectively.

The total cross section was found to be $(152 \pm 11) \cdot 10^{-27}$ cm^2. Table 1 contains the reactions that may take place in the scattering of 630-Mev protons on helium nuclei. They are compiled in four groups and are discussed individually. Fig. 2 shows a picture of a pion pair production. Fig. 3 depicts the angular distribution of elastically scattered protons; $d\sigma/d\Omega$ decreases rapidly with increasing angle. The emitted angle was 50 in the center-of-gravity system. The elastic cross section was found to be $(\ldots 0 \pm 4.2) \cdot 10^{-27}$ cm^2 without correcting for small angles, and $(24.0 \pm 3.0) \cdot 10^{-27}$ cm^2 with a correction. The cross section in the range of from 315 to 630 Mev hardly depended on energy. The angular distribution of elastically scattered protons was also computed within the optical model in Born approximation without considering the spin-orbit- and Coulomb interactions, both for 630 and 315 Mev; the distribution curves obtained are likewise drawn in the diagram (Fig. 3). Inelastic collisions are divided into two groups and separately

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discussed on this basis: multiple collisions in the helium nucleus and quasi-free scattering:

$\sigma_{nucl} = \sigma_{pn} + \sigma_{pp} = \sigma_1 + \sigma_2 + \sigma_3 + \sigma_4$ is written down (σ_{nucl} being the total ... σ_{pn}, σ_{pp} the cross sections of the depicting proton with the neutrons of the nucleus, ... number of collisions of quasi-free interactions, σ_1 the number of the two-pronged ... stars (without elastic scattering), σ_3 and σ_4 the number of four and five-pronged stars, σ_2^k the number of cases of a multiple interaction. The reactions of the various stars are discussed. The contribution of multiple interactions ... processes is written down as being $\xi = 0.22 \pm 0.07$. Cross sections are compiled in Table 2 and details are discussed for the possible reactions in the case of quasi-free scattering. A section of $(15 \pm 4) \cdot 10^{-27}$ cm^2 was found for the quasi-elastic p-p scattering, and $(24 \pm 2) \cdot 10^{-27}$ cm^2 per nucleon for the quasi-elastic p-n interaction. The total inelastic scattering cross section is found to be $(126 \pm 14) \cdot 10^{-27}$ cm^2, the cross section for events involving ... meson production in p-n collisions was found to be $(1.3 \pm 0.3) \cdot 10^{-27}$ cm^2 per neutron. Fig. 4 shows the angular distribution of the quasi-elastic p-p

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scattering. The authors finally thank A. G. Polyakhina, V. P. Perelygin, and Yu. A. Shcherbakov for their assistance. There are 4 figures, 2 tables, and 17 references, 7 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yuderaykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: September 10, 1959

SHCHERBAKOV, Yu. A.

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AUTHORS: Kuznetsov, N. P., Kalinin, M. M., Solntsev, V. M., Filippov, A. T., Shamshadov, Sh. A.

TITLE: Angular and Momentum Distributions of Residual Nuclei in Inelastic Scattering of Fast π-Mesons and Protons From Helium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 4(10), pp. 929-936

TEXT: The authors studied the angular and momentum distributions of the residual nuclei in quasifree interaction of fast pions and protons with helium nuclei. A high pressure diffusion chamber was employed and was irradiated by particle beams of the synchrocyclotrons of their institute. [illegible] of the protons was (650±15) Mev, that of the π⁻-meson (770±7) Mev, and that of the π⁺-meson (1000±6) Mev. 20,000 photographs were [illegible] of proton and π⁻-meson beams, and 10,000 of the beams of π⁺-mesons. The details of the experiment, evaluation of the plates, and the

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Identification of events are described already in Refs. 8 and 9. Fig. 1 shows a typical quasielastic proton - proton scattering event. The observed reactions and their cross sections are given in Table 1. Fig. 2 shows the angular distribution of the residual nuclei in quasifree p - p scattering; Fig. 3 shows the angular distribution for the interaction of π⁻- and π⁺-mesons. The residual nuclei were preponderantly emitted forward. The anisotropy of the angular distribution is characterized by $a = N_1/N_2$ (N_1 - number of nuclei emitted in the forward direction, N_2 - number of nuclei emitted backward). The values obtained are: $a_p = 2.17 \pm 0.15$, $a_\pi = 1.26 \pm 0.15$. The momentum distributions of the residual nuclei are shown in Fig. 4 (protons) and Fig. 5 (pions). The observed results are interpreted by the authors on the basis of the Serber - Goldberger model. When the additional momentum Δp imparted to the residual nucleus by the knocked-out nucleon is taken into account, a good agreement between the experimental and the calculated data is obtained (Fig. 6). The angular distribution for the reaction (1):

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$p + Be^9 \rightarrow p + p + B^9$ was calculated by means of a "Strela" computer. Figs. 7 and 8 show the momentum spectra of B^9 nuclei where account has been taken of the interaction between the nucleon and the residual nucleus. The momentum p_0 for pions as well as protons was found to be 150 Mev/c which corresponds to a kinetic energy value 1232 Mev. The momentum distribution may be described by a Gaussian function; the value of the momentum becomes 1/e of the maximum at 1222 Mev. The authors mention a paper of N. G. Nemcharyakov et al. (Ref. 4). They thank I. K. Vzorov and [illegible] Prokoshkin for discussions, [illegible] for calculations with the computer, and Yu. A. Shamshev for help in the evaluation of experimental data. There are 8 figures, 1 table, and 17 references: 5 Soviet, 12 US, 1 British, and 1 German.

ASSOCIATION: Obʺyedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: May 19, 1960

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SHC HERBAKOV, V.L.A.

SHCHERBAKOV, Yu. A., Cand. Phys-Math. Sci. (diss) "Interaction of Fast Protons and $1^{\pm}$ Mesons with Nucleus of He^{4}." Dubna, 1958, 11 pp (Combined Institutes of Nuclear Research, Laboratory of Nuclear Problems) 100 copies (KL Supp 10-61, 244).

FILIPPOV, A.I.; KULYUKIN, M.M.; PONTECORVO, B.; SHCHERBAKOV, Yu.A.; SULYAYEV, R.M.; TSUPKO-SITNIKOV, V.M.; ZAYMIDOROGA, O.A.

Observation of the reaction $\mu^- + He^3 \rightarrow H^3 + \nu$. Dubna, Izdatel'skiy otdel Ob"edinennogo in-ta iadernykh issledovanii, 1961. 9 p.
(No subject heading)